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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,664	09/30/2003	Torsten Niederdrank	P03,0382	5809

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EXAMINER	
ENSEY, BRIAN	
ART UNIT	**PAPER NUMBER**
2615	

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/675,664	NIEDERDRANK, TORSTEN	
	Examiner	Art Unit	
	Brian Ensey	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *6,8-11 and 17* is/are allowed.

6)☒ Claim(s) *1-5,12 and 13* is/are rejected.

7)☒ Claim(s) *14-16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Withdrawal of Finality

In light of newly discovered prior art, the finality of the previous final office action mailed 7/10/06 has been withdrawn. The after final response submitted 8/28/06 has been entered because it clarifies the claims and places the application in better condition for allowance. Therefore, the claims submitted by the after final amendment are the current claims under consideration.

Claim Objections

Claim 14 is objected to because of the following informalities: Line 10 is essentially a duplication of lines 3-5. It is recommended to change line 10 to "the antenna device further comprising". Appropriate correction is required.

Claim 14 is objected to because of the following informalities: Lines 3-7 are grammatically awkward. Line 3 claims "transmitting signals by a radio device" and lines 5 and 6 claim "performing, by an antenna of a radio device...at least one of transmitting and receiving...". The statements are somewhat redundant and awkward. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson U.S. Patent No. 5,721,783 in view of Hayakawa et al. U.S. Patent No. 6,862,436.

Regarding claim 1, Anderson discloses a hearing device, comprising: a radio device (16) to transmit signals to a second hearing device (10), the radio device comprising an antenna (14) device to perform at least one of transmitting and receiving (See Fig. 1 and col. 3, line 52 to col. 4, line 24). Anderson further teaches the use of oscillation circuits in the earpiece (See col. 10, lines 29-37) and also teaches the need for size reduction and reduced power consumption. Anderson does not expressly disclose the antenna device comprising a self-exciting oscillation circuit and a switch; and a second capacitor being connectable in parallel to the first capacitor by the switch, so that a resonance frequency of the self-exciting oscillation circuit can be modulated by switching the switch. However, Hayakawa teaches an antenna circuit for a transmitter/receiver comprising a self-oscillation circuit (See LC antenna circuit of Fig. 1 forming a resonant tank circuit antenna). Hayakawa further teaches a switching circuit (SW in Fig. 1) to connect at least one capacitor in parallel to the first capacitor when the switch is switched to transmitter mode to change (modulate) the resonant frequency of the antenna circuit (See Fig. 1 and col. 4, line 54 to col. 5, line 35). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize an antenna comprising a self oscillation circuit for size reduction and reduced power consumption.

Regarding claim 2, the combination of Anderson in view of Hayakama further discloses the antenna device consists exclusively of an LC oscillation circuit (See Hayakama Fig. 1).

Regarding claim 4, the combination of Anderson in view of Hayakama discloses a two way wireless communication link (See Anderson col. 1, lines 50-63). The combination of

Anderson in view of Hayakama does not expressly disclose a half-duplex transmission line is established with the radio device. However, half duplex communication is merely communication which occurs in one direction at a time and the combination of Anderson in view of Hayakama teaches transmission from one device to the other for processing and then back and the need for size reduction and reduced power consumption. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention that half duplex communication is used for reduced power consumption.

Regarding claim 5, the combination of Anderson in view of Hayakama further discloses a signal transmission is implemented in the long-wave range with the radio device (See Anderson col. 4, lines 26-29).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Anderson in view of Hayakama as applied to claim 1 above, and further in view of Katayanagi et al. U.S. Patent No. 5,732,390.

Regarding claim 3, the combination of Anderson in view of Hayakama discloses a hearing aid as claimed. the combination of Anderson in view of Hayakama further teaches simultaneous capabilities of noise cancellation and binaural processing and does not limit the methods of performing noise reduction (See col. 2, lines 60-65). The combination of Anderson in view of Hayakama does not expressly disclose a receiving device comprising a median filter device configured to reduce noise signals. However, the use of median filters for noise reduction in transmitting and receiving devices is well known in the art and Katayanagi teaches using a median filter in noise reduction (See col. 10, lines 23-43). It would have been obvious to one of

ordinary skill in the art at the time of the invention to utilize a median filter to capture a mid value and report and accurate level for noise reduction (See col. 10, lines 23-30).

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Anderson in view of Hayakaya and further in view of Yamada et al. U.S. Patent No. 5,768,690.

Anderson discloses a hearing device, comprising: a radio device (16) to transmit signals to a second hearing device (10), the radio device comprising an antenna (14) device to perform at least one of transmitting and receiving (See Fig. 1 and col. 3, line 52 to col. 4, line 24). Anderson further teaches the use of oscillation circuits in the earpiece (See col. 10, lines 29-37) and also teaches the need for size reduction and reduced power consumption. Anderson does not expressly disclose the antenna device comprising a self-exciting oscillation circuit or an LC oscillation circuit that is configured both to generate a carrier frequency for transmission and to clock the receiving device. However, Hayakawa teaches an antenna circuit for a transmitter/receiver comprising a self-oscillation circuit (See LC antenna circuit of Fig. 1 forming a resonant tank circuit antenna). Further, Yamada teaches an LC oscillation circuit that is configured both to generate a carrier frequency for transmission and to clock the receiving device (See Figs. 1 col. 3, line 66 to col. 4, line 3 and col. 5, lines 27-43).). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the oscillation circuit of the combination of Anderson in view of Hayakaya in further view of Yamada for the oscillation circuit of Anderson to reduce size and save power (See Yamada col. 3, lines 22-26).

Regarding claim 13, Anderson does not expressly disclose the LC oscillation circuit is used to clock a filter device of the receiving device. However, Yamada teaches the LC

oscillation circuit is used to clock a filter device of the receiving device (See Figs. 1 and col. 5, line 61 to col. 6, line 4). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the oscillation circuit of Yamada for the oscillation circuit of Anderson to reduce size and save power (See Yamada col. 3, lines 22-26).

Allowable Subject Matter

Claims 6, 8-11 and 17 are allowed.

Claim 15 is objected to as being dependent upon an objected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art does no teach an antenna comprising a self-exciting LC oscillation circuit and a median filter wherein the LC oscillation circuit both generates a carrier frequency for transmission and clocks the median filter.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Ensey whose telephone number is 571-272-7496. The examiner can normally be reached on Monday - Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, Va. 22313-1450

Or faxed to:

(571) 273-8300, for formal communications intended for entry and for informal or draft communications, please label "PROPOSED" or "DRAFT".

Hand-delivered responses should be brought to:

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Randolph Building
401 Dulany Street
Arlington, VA 22314

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BKE
September 14, 2006

SINH TRAN
SUPERVISORY PATENT EXAMINER